

Current Status of the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (currently amended) A microscope (2) with a stand (12) and a microscope stage (18) disposed on the stand (12) and capable of being moved in all three space directions (X, Y, and Z) by means of motors comprising:

~~at least one~~ a plurality of temperature ~~sens~~ors (30) in or on said stand (12);

a regulating and control unit (10), said regulating and control unit including a data storage device (9) and a microprocessor (11);

a correction table (44) stored in said data storage device (9) and containing drift values for the three space directions (X, Y and Z) of said ~~stand (12)~~ stage (18) as a function of temperature; and, first, second, and third motors (21, 22, 23) on said microscope stage (18);

wherein said temperature sensors (30) are connected to said microprocessor and provide signals on the basis of which it is possible to call up appropriate values for correction; and,

whereby said regulating and control unit (10) adjusts said first, second and third motor (21, 22, 23) so that said microscope stage (18) assumes a stable position in space independently of the temperature.

Claim 2. (previously presented) The microscope according to claim 1, wherein said correction table (44) can be established manually.

Claim 3. (previously presented) The microscope according to claim 1, wherein said correction table (44) can be established automatically.

Claim 4. (previously presented) The microscope according to claim 1, wherein said regulating and control unit (10) is integrated into the stand (12) of the microscope (2).

Claim 5. (previously presented) The microscope according to claim 1, wherein said the regulating and control unit (10) in the stand (12) is disposed in an external electronics box (42).

Claim 6. (previously presented) The microscope according to claim 4 further comprising an input unit (38) which is connected with the regulating and control unit (10).

Claim 7. (previously presented) The microscope according to claim 6, characterized in that the input unit (38) is a mouse, a trackball, a key or a touchscreen.

Claim 8. (currently amended) A method for correcting XYZ drift caused by temperature changes in a microscope (2) with a stand (12), a microscope stage (18) disposed on the stand (12) and being capable of being moved in all three space directions (X, Y, Z) by a first, second, and third motors, and with ~~at least one~~ a plurality of temperature sensor ~~sensors~~ (30) disposed in or on the stand (12), comprising:

- recording and storing a correction table (44) in a data storage device (9) in a regulating and control unit (10) associated with said microscope (2), wherein correction table contains drift values for the three space directions (X, Y, and Z) of said stage as a function of temperature; and,
- operating said microscope (2) in the examination mode so that said regulating and control unit (10), on the basis of the signals received from the plurality of temperature sensors (30) and of the contents of the correction table (44), operates said first, second and third motors (21, 22, 23) of the microscope stage (18) in a manner such that the position of said stage (18) relative to an optical axis (13) of an objective placed in the work position of said objective is constant with time.

Claim 9. (previously presented) The method according to claim 8, wherein said correction table (44) is established manually.

Claim 10. (previously presented) The method according to claim 9, further comprising:
providing an ocular having a first cross hairs (34);
placing a slide having a second cross hairs (35) on said microscope stage (18);
focusing said second cross hairs (35) by setting said third motor (23); and,
setting said first and/or second motor (21, 22) to superimpose said first cross hair and said second cross hair; and,
actuating said input device (38) to transfer data required for displacement to superimpose said first cross hairs and said second cross hairs of said ocular and said second slide to said correction table (44).

Claim 11. (previously presented) The method according to claim 10, wherein said input device (38) is a mouse, a trackball, a key or a touchscreen.

Claim 12. (previously presented) The method according to claim 8, wherein said correction table (44) is established automatically.

Claim 13. (previously presented) The method according to claim 12 further comprising
focusing an autofocus of a camera (25) on said second cross hairs (35) ;
displacing said second cross hairs (35) into said optical axis (13) of the objective (16) using an image-processing software in cooperation with said first and second motors (21, 22); and
transferring the data needed for the displacement to the correction table (44) available in the data storage device (9).
wherein only said second cross hairs (35) is provided on said slide.

Claim 14. (previously presented) The method according to claim 8, wherein said regulating and control unit (10) is integrated into said stand (12) of said microscope (2).

Attorney Docket No. LWEP:132US
U.S. Patent Application No. 10/529,987
Reply to Office Action of May 16, 2007
Date: July 16, 2007

Claim 15. (previously presented) The method according to claim 8, wherein said regulating and control unit (10) in said stand (12) is disposed in an external electronics box.

Claim 16. (previously presented) The method according to claim 8, further comprising:
establishing said correction table on the basis of a statistical evaluation of several stands; and,
-incorporating said correction table in the regulating and control unit (10) of said microscope.

Claim 17. (previously presented) The microscope according to claim 5 further comprising an input unit (38) which is connected with the regulating and control unit (10).

Claim 18. (previously presented) The microscope according to claim 17, characterized in that the input unit (38) is a mouse, a trackball, a key or a touchscreen.